

## Emperoptera from Maui (Diptera, Dolichopodidae)

BY ELWOOD C. ZIMMERMAN  
Bernice P. Bishop Museum

(Presented at the meeting of September 2, 1937)

Heretofore, the aberrant, monotypic genus *Emperoptera* has been known to occur only on the island of Oahu. The genus was erected by Grimshaw in 1902 (Fauna Hawaiiensis, vol. III, p. 81) for the reception of a peculiar, flightless species collected by Dr. Perkins in the Koolau mountains. During a recent trip to Mount Haleakala on Maui, I collected a second species of the genus which I describe as new herein.

Unfortunately the nine specimens of the type series of *Emperoptera mirabilis* Grimshaw, the genotype, were in poor condition when Grimshaw drew up his descriptions. His descriptions are incomplete, and many important characters, especially in chaetotaxy, are omitted. Unfortunately it is not possible for me to substantially enlarge the descriptions of *E. mirabilis* because no complete specimens are at hand. In Bishop Museum there are three mounts from the original series, but two of these are fragmentary and not recognizable and the third is so mangled that many of the important morphological features are obliterated. Evidently no specimens of the species have been collected since Dr. Perkins was working here. Dr. F. X. Williams, who has made extensive and careful collections of Hawaiian Dolichopodidae, and I have made several trips to the type locality and have patiently and specially searched for this fly without success.

If one were to work entirely from the descriptions, he would possibly come to the conclusion that the Maui species belonged to a new genus, rather than to *Emperoptera*. Grimshaw did not describe the cephalic or thoracic setae, and he considered the halteres absent. After critically examining the specimens in Bishop Museum, I have reached the conclusion that halteres are present on *E. mirabilis*. On one of the specimens the halteres are represented by small stumps that may be only the bases of the stalks of halteres whose heads have been broken off. On the other hand, they may be entire but much atrophied. The former conclusion is the most probable, I believe, because on the new species the halteres are large and well developed, but if their heads were broken off similar stump-like structures would remain. An accurate discussion of the structures can only be given when fresh material of *E. mirabilis* is collected.

Twenty-four specimens of the new species were collected. Although many of the specimens, especially their heads, are distorted, owing to drying and the subsequent collapse of the body walls, several specimens are in perfect condition, and I took the precaution to preserve one specimen in alcohol. An accurate description of the

new species is therefore possible, and I have included both generic and specific characters in the description.

***Emperoptera haleakalae***, new species (fig. 1).

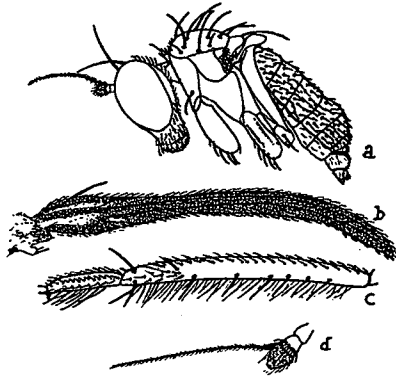


Fig. 1.—Diagrams of details of *Emperoptera haleakalae*, new species, male; a, side view, tibiae and tarsi omitted; b, wing; c, tibia and first tarsal segment of middle leg; d, antenna.

#### Male

*Head* with the eyes black, somewhat diluted with red, occupying the entire sides of the head, extending from the top to the base of the rostrum, distinctly contiguous at about half way between the antennae and the rostrum, with short, fine hairs between the facets; epistome narrow, triangular, with short dense, greyish pile; labrum with similar pile and several conspicuous black bristles; medially emarginate; rostrum with rather numerous black bristles; frons finely reticulate, rather bronzy or greenish-brown, with iridescent reflections; vertex rounded, not sharp; ocelli in a triangle on a distinct, but low and rounded callosity, the distance between the posterior pair slightly less than the distance between either and the nearest point on the eye; bristles shiny black; greater ocellars very conspicuous, fully as long as the distance between the eyes across the ocellar triangle; the two lesser ocellars small and rather inconspicuous, not longer than the distance between the ocelli; the single vertical similar in size to the greater ocellars; with a row of conspicuous posterior orbital bristles; otherwise without bristles. *Antennae* with the first two segments yellow; second with a whorl of stout black setae near the apex; third segment infusate, almost black, clothed with rather dense, fine hair, sub-triangular, somewhat larger than the second; arista slightly longer than the greater ocellar bristles, very slender, evenly and densely clothed with fine, short hair throughout. *Thorax* finely reticulate, pleurae yellow or but slightly infusate, notum concolorous, bronzy-brown with slight iridescent reflections; scutellum not quite twice as broad as long, arcuate behind; without hair, bristles stout, shiny black; pronotum with a row of comparatively long, fine bristles projecting over the neck; mesonotum with numerous, very small, inconspicuous setae on its anterior face above the pronotum, with one long, one short and one very short humeral, one long posthumeral, two notopleurals, the anterior one fully twice as long as the posterior, one long supraalar, one similar postalar together with the posterior dorsocentrals making a prescutellar row of four long

similar bristles, with the postalar slightly longer, with two similar anterior dorsocentrals on either side, the longitudinal distance between them about three fourths that between the second anterior dorsocentral and the posterior dorsocentral, the second anterior dorsocentral longer than the other dorsal bristles excepting the two long, usually decussate, posterior, marginal scutellars, scutellum otherwise with two small inconspicuous bristles between, and one similar bristle on each side of the major scutellars; propleura with a single propleural bristle projecting well below the base of the front coxa; pleurae otherwise without distinct bristles. *Wings* reduced to narrow, falciform, infusate, densely setose appendages, about as long as the hind tibia plus the first tarsal segment and, at the middle, hardly as broad as the scutellum; with three strong veins at the base; with a prominent bristle, longer than the greatest breadth of the wing, arising from the costa at a short distance from its base; axillary process with two small bristles. *Halteres* yellow, strongly developed, the club ovate. *Abdomen* colored as the mesonotum; metanotum forming a carina around the anterior and lateral margins of the first tergite; rather densely set throughout with scattered black bristles, but without hair. *Legs* with the fore and hind coxae yellow, the fore coxae paler, the mid coxae yellow but slightly infusate; fore and mid coxae with conspicuous black bristles on the inner sides, those on the lower inner edge of the fore pair largest, mesocoxae shallowly caniculate externally, metacoxa with a conspicuous bristle at about the middle on the outer side near the trochanter, and a long one at the anterior apical angle; trochanters with a few small setae; femora yellow but usually somewhat infusate, rather densely clothed with black bristles, with one or two longer bristles near the apex, the hind pair with a particularly conspicuous long bristle on the outer side at a short distance from the apex, middle pair with several long bristles on the inner lower edge near the base; tibiae yellow but infusate, the anterior pair usually slightly paler; length of tibiae as, fore 30, middle 50, and hind 65; fore pair with short black bristles and no long ones, hind pair with a variable number of long bristles in addition to the short ones, often eight or ten but frequently fewer owing to abrasion, middle pair with the bristles short on the posterior edge but otherwise more numerous and much longer at the apex and on the anterior side; tarsi yellow but infusate; the fore pair with short bristles throughout, the segments 20, 10, 7, 5, 5 in length; middle pair with short bristles as the fore pair but with the first segment with long bristles on the outer side and a distinct tooth at its outer apical angle, the segments 24, 20, 7, 5; hind pair with short bristles throughout as the fore pair, the segments 15, 19, 13, 8, 6. Length of body, 1.52 mm.

#### Female

Similar to the male in most details excepting the terminalia, but with the eyes not absolutely contiguous but separated at the middle by almost the diameter of a facet, the separation pilose; the middle tibiae rather similar to the hind pair in chaetotaxy and without long, dense bristles on the anterior edge; first segment of the middle tarsi not modified as in the male.

Maui, Hawaiian islands. Holotype male, allotype female in B. P. Bishop Museum, 16 males and three female paratypes and two decapitated males collected by me on the northwest slope of Mt. Haleakala, 6,000-6,500 feet, August 18, 1937, and one male from the Kula pipe line trail in the forest near Olinda at 4,000 feet, August 20, collected in alcohol and dissected. These localities are not far from one another; the locality of greater elevation being above Olinda and reached by the new road to the summit of Haleakala,

taking off down the slope to the northeast of Puu Nianiau to the margin of the forest below the upper grazing land.

This species differs from *Emperoptera mirabilis* principally as follows: the derm of the dorsum is dull and reticulate, somewhat bronze with iridescent reflections; it is, for the most part, shining dark brown or black in *E. mirabilis*; the wings are somewhat narrower and there is no long bristle at the apex. The specimens of *E. mirabilis* before me are too fragmentary for further accurate comparison.

The individuals of this species range over the moss and lichen covered trunks and branches of living and dead trees, on fallen logs and on the ground in the damp forest. They are active and will jump one and one half to two inches at the slightest provocation. Their small size and cryptic coloration makes them difficult to find. The only specimens I saw were those I captured and a search of their habitat failed to disclose them running about undisturbed. They were collected by beating moss and lichen covered limbs or trunks, by tearing off moss and lichens and shaking the material into a beating net and by throwing ground litter on a piece of white sheeting and watching carefully until they began to hop or run about. They are easily recognized in the field owing to their peculiar, atrophied wings being held horizontally at about right angles to the body and by their habit of jumping once or several times in succession as they run about.

### **Idotasia in New Ireland (Coleoptera, Curculionidae)**

BY ELWOOD C. ZIMMERMAN  
Bernice P. Bishop Museum

(Presented at the meeting of September 2, 1937)

Heretofore, the cryptorhynchine genus *Idotasia* Pascoe has not been recorded from New Ireland. The data offered in this paper fill another gap in the chain of distribution of the genus.

I take much pleasure in dedicating the following new species to Mr. C. E. Pemberton, as a slight token of appreciation for his many favors and kind cooperation in the past.

#### ***Idotasia pembertoni*, new species (fig. 1).**

Male. Derm uniformly shiny black with the antennae reddish-brown; scaling and setae white.

*Head* flattened above; densely and comparatively coarsely punctate, the punctures bearing short setae, without an interocular fovea; eyes hardly more than half as broad as the interocular area. *Rostrum* rather evenly arcuate from base to apex below, continuous with the dorsal outline of the head at the base above to about half way between the eye and the insertion of the antennae and then abruptly bent downward, strongly convex from the base almost to the antennae and then straight to the apex; with three strong dorsal carinae from the base to beyond the antennae, the lateral ones extend-